

REMARKS

The foregoing amendment is filed in response to the official action dated June 9, 2008. Reconsideration is respectfully requested.

The status of the claims is as follows.

Claims 1-45 are currently pending.

Claims 1-45 stand rejected.

Claims 5-6, 11, 26-27, 32, 37, and 42 have been amended.

Claims 12, 14, 33, 35, 38, 40, 43, and 45 have been canceled without prejudice.

The Examiner has rejected claims 1-3, 8-9, 18-19, 22-24, 29-30, 36, and 41 under 35 U.S.C. 102(b) as being anticipated by Pompei (USP Pub. 2001/0007591; the "Pompei reference"). The Applicant respectfully submits, however, that base claims 1, 22, 36, and 41 recite non-obvious subject matter that distinguishes over the art of record, and therefore the rejections of claims 1-3, 8-9, 18-19, 22-24, 29-30, 36, and 41 under 35 U.S.C. 102 are unwarranted and should be withdrawn.

For example, base claim 1 recites the following:

"A system, comprising:
an electronic entertainment system including at least one source of audio signals, the audio signals corresponding to at least one audio channel; and
a directed acoustic sound system including:

a modulated signal generator configured to generate an ultrasonic carrier signal modulated with at least one of the audio signals;

a driver amplifier configured to amplify the modulated ultrasonic carrier signal; and

at least one directional loudspeaker, the directional loudspeaker including at least one acoustic transducer configured to receive the modulated ultrasonic carrier signal amplified by the driver amplifier, and to project a sound beam representing the modulated ultrasonic carrier signal through a propagation medium along a pre-selected path to reproduce the at least one audio signal along at least a portion of the path." (emphasis added)

In an anticipation analysis under 35 U.S.C. 102(b), it is required that a single reference teach each and every element of a rejected claim. The Applicant respectfully submits that, in the system of base claim 1, the Pompei reference does not teach or suggest an electronic entertainment system that includes at least one source of audio signals, at least one of which is employed to modulate an ultrasonic carrier signal, as specifically recited in claim 1. It is therefore respectfully submitted that the Pompei reference does not anticipate claim 1 and the claims depending directly or ultimately therefrom.

The official action indicates on page 2 that the Pompei reference discloses using an audio device for producing sound, in which the audio device may be a computing device. The official action goes on to indicate that "it would have been obvious to

substitute such a computing device which create selected path sound with any device including radio for performing the same method". The Applicant respectfully points out, however, that such a determination of obviousness would involve an analysis under 35 U.S.C. 103, not 35 U.S.C. 102. Nevertheless, even if the current rejections of claims 1-3, 8-9, 18-19, 22-24, 29-30, 36, and 41 were made under 35 U.S.C. 103 instead of under 35 U.S.C. 102, the Applicant respectfully submits that base claim 1 would still recite non-obvious subject matter that distinguishes over the art of record, including the Pompei reference.

For example, the Pompei reference discloses that a drawback of the conventional parametric audio system is that the ultrasonic signal is typically directed along the selected projection path by a mechanical steering device; this allows the sound to be positioned dynamically or interactively, as controlled by a computer system (see paragraph [0006] of the Pompei reference). The Pompei reference also discloses that a rich, flexible audio scene of many dynamic sound objects may be generated by changing the direction of the modulated ultrasonic beam in real-time (e.g., via a computerized beam steering control device **124**; see paragraph [0040], and Fig. 1, of the Pompei reference).

The Applicant respectfully submits, however, that neither the computer system disclosed in paragraph [0006] of the Pompei reference, nor the computerized beam steering control device **124** disclosed in paragraph [0040] of the Pompei reference, corresponds to an entertainment system including at least one source of audio signals, as recited in base claim 1. In fact, the computer system and computerized device disclosed in the Pompei reference are used for a purpose that is significantly different from that of the entertainment system recited in claim 1. Specifically, the computer system and computerized device of the Pompei reference are used for the purpose of controlling the positioning of a sound beam generated by a parametric audio system, not for providing a source of audio signals like the entertainment system of claim 1. The Applicant therefore respectfully submits that the teaching of the Pompei reference, modified as suggested on page 2 of the official action, would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 1 and the claims depending directly or ultimately therefrom.

In sum, the Pompei reference does not teach or suggest "A system, comprising: an electronic entertainment system including at least one source of audio signals, the audio signals corresponding to at least one audio channel; and a directed

acoustic sound system including: a modulated signal generator configured to generate an ultrasonic carrier signal modulated with at least one of the audio signals; a driver amplifier configured to amplify the modulated ultrasonic carrier signal; and at least one directional loudspeaker, the directional loudspeaker including at least one acoustic transducer configured to receive the modulated ultrasonic carrier signal amplified by the driver amplifier, and to project a sound beam representing the modulated ultrasonic carrier signal through a propagation medium along a pre-selected path to reproduce the at least one audio signal along at least a portion of the path", as recited in base claim 1. The Applicant therefore respectfully submits that the Pompei reference does not anticipate claim 1 and the claims depending directly or ultimately therefrom.

For at least the reasons provided above with reference to base claim 1, the Applicant further submits that the Pompei reference does not anticipate base claims 22, 36, and 41, and the claims depending directly or ultimately therefrom. Accordingly, it is respectfully submitted that the rejections of claims 1-3, 8-9, 18-19, 22-24, 29-30, 36, and 41 under 35 U.S.C. 102 should be withdrawn, and no rejections under 35 U.S.C. 103 should be made over this reference and/or the art of record.

The Examiner has rejected claims 5-7, 10, 20-21, 26-28, and 31 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Milsap (USP Pub. 2003/0185404; the "Milsap reference"). The Applicant respectfully points out that the Examiner has actually rejected claims 6-7 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Paritsky *et al.* (USP Pub. 2002/0048373; the "Paritsky reference"). The Applicant respectfully submits, however, that neither the Milsap reference nor the Paritsky reference remedies the deficiencies of the Pompei reference, and therefore the combined teachings of the Pompei and Milsap references, and the combined teachings of the Pompei and Paritsky references, would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claims 5-7, 10, 20-21, 26-28, and 31.

Specifically, with reference to claim 5, the official action indicates, in relevant part, that the Pompei reference fails to disclose the claimed system further including at least one sensor configured to detect a distance from the directional loudspeaker to a user of the system, but that the Milsap reference discloses that missing element. The Applicant has amended claim 5 to more specifically recite the subject matter of the present invention. For example, amended claim 5 recites the following:

"The system of claim 1:

wherein the directional loudspeaker is a parametric array;

wherein the system further includes a parametric array processor configured to control the parametric array, and at least one sensor configured to detect a distance from the directional loudspeaker to a user of the system; and

wherein the parametric array processor is configured to allow at least one parameter thereof to be adjusted based upon the detected distance from the directional loudspeaker to the user of the system."
(emphasis added)

The Applicant respectfully submits that the Milsap reference neither teaches nor suggests the claimed system including at least one sensor configured to detect a distance from the directional loudspeaker to a user of the system, as recited in amended claim 5. Instead, the Milsap reference discloses a tracking system that provides controlled adjustment of delay per speaker based on the listener's current location (see paragraphs [0043] and [0044] of the Milsap reference). The combined teachings of the Pompei and Milsap references therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 5. For at least the reasons provided above with reference to claim 5, the Applicant further submits that the combined teachings of the Pompei and Milsap references would not

suggest to one skilled in this art at the time of the invention the subject matter of claim 26.

Moreover, with reference to claim 6, the official action indicates that the combined teachings of the Pompei and Paritsky references, as a whole, teach the system of claim 5, wherein the modulated signal generator is configured to generate an ultrasonic signal having characteristics based at least in part on the detected distance to the system user. The Applicant respectfully submits, however, that the Paritsky reference discloses controlling directional characteristics of the reception of spoken audible sound via an optical microphone, not characteristics of a transmitted ultrasonic signal, as specifically recited in amended claim 6. The combined teachings of the Pompei and Paritsky references therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 6. For at least the reasons provided above with reference to claim 6, the Applicant further submits that the combined teachings of the Pompei and Paritsky references would not suggest to one skilled in this art at the time of the invention the subject matter of claim 27.

With reference to claim 10, the official action indicates that Official Notice is taken that using a system (an electronic

entertainment system) for reproducing audio signals to be selected from the group consisting of a television, a radio, an audio tape player, a phonograph, a compact disk player, a digital video disk player, a laser disk player, a video game, a desktop computer, a laptop computer, and an MP3 player, is commonly known. The Applicant respectfully traverses, however, the Examiner's taking of Official Notice regarding claim 10 because a system has not been heretofore known that includes such an entertainment system and a directed acoustic sound system, as specifically recited in claim 10. The combined teachings of the Pompei and Milsap references therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 10. For at least the reasons provided above with reference to claim 10, the Applicant further submits that the combined teachings of the Pompei and Milsap references would not suggest to one skilled in this art at the time of the invention the subject matter of claim 31.

With reference to claim 20, the official action indicates that Official Notice is also taken that the concept of having a swing-arm assembly (or a clamp assembly; see claim 21) to mount the directional loudspeaker to a ceiling, a floor, or a wall, is commonly known. The Applicant respectfully traverses, however,

the Examiner's taking of Official Notice regarding claim 20 because a system has not been heretofore known that includes an entertainment system, and a directed acoustic sound system, including a directional loudspeaker mounted as claimed in claim 20. The combined teachings of the Pompei and Milsap references therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 20. For at least the reasons provided above with reference to claim 20, the Applicant further submits that the combined teachings of the Pompei and Milsap references would not suggest to one skilled in this art at the time of the invention the subject matter of claim 21.

Accordingly, it is respectfully submitted that the rejections of claims 5-7, 10, 20-21, 26-28, and 31 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claims 11-13, 32-34, 37-39, and 42-44 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Schmmoll III (USP 4,308,422; the "Schmmoll reference"). The Applicant respectfully submits, however, that the Schmmoll reference does not remedy the deficiencies of the Pompei reference, and therefore the combined teachings of the Pompei and Schmmoll references would not suggest to one of

ordinary skill in this art at the time of the invention the subject matter of claims 11-13, 32-34, 37-39, and 42-44.

In the foregoing amendment, the Applicant has amended claim 11 to more specifically recite the subject matter of the present invention. For example, amended claim 11 recites the following:

"The system of claim 1:

further including a second amplifier and at least one non-directional loudspeaker, the second amplifier being configured to amplify one or more audio signals corresponding to at least one of the audio channels and to drive at least one non-directional loudspeaker;

wherein the modulated signal generator is connected in-line with the second amplifier;

wherein the modulated signal generator is configured to selectably generate the ultrasonic carrier signal modulated with the at least one of the audio signals; and

wherein the second amplifier is configured to selectably amplify the one or more audio signals, thereby allowing the directional loudspeaker and the non-directional loudspeaker to selectably reproduce the audio signals." (emphasis added)

The Applicant respectfully submits that the Schmmoll reference neither teaches nor suggests at least the modulated signal generator connected in-line with the second amplifier, as recited in amended claim 11 (see page 17, line 29, to page 18, line 4, of the application). Instead, the Schmmoll reference discloses a pair of amplifiers **28** and **36** configured to receive signals in parallel (see Fig. 2 of the Schmmoll reference). The

combined teachings of the Pompei and Schmmoll references therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of amended claim 11. For at least the reasons provided above with reference to amended claim 11, the Applicant further submits that the combined teachings of the Pompei and Schmmoll references would not suggest to one skilled in this art at the time of the invention the subject matter of amended claims 32, 37, and 42.

Accordingly, it is respectfully submitted that the rejections of claims 11-13, 32-34, 37-39, and 42-44 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claims 14, 35, 40, and 45 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of the Schmmoll reference, and further in view of Nourse *et al.* (USP Pub. 2003/0063755). The Applicant respectfully points out, however, that, in the foregoing amendment, claims 14, 35, 40, and 45 have been canceled without prejudice. Accordingly, it is respectfully submitted that the rejections of claims 14, 35, 40, and 45 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claims 16-17 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Shinohara (USP Pub. 2003/0005461; the "Shinohara reference"). The

Applicant respectfully submits, however, that the Shinohara reference does not cure the deficiencies of the Pompei reference, and therefore the combined teachings of the Pompei and Shinohara references would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claims 16-17. Accordingly, it is respectfully submitted that the rejections of claims 16-17 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claim 15 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Kurtz (USP 6,754,452; the "Kurtz reference"). The Applicant respectfully submits, however, that the Kurtz reference does not cure the deficiencies of the Pompei reference, and therefore the combined teachings of the Pompei and Kurtz references would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 15. Accordingly, it is respectfully submitted that the rejection of claim 15 under 35 U.S.C. 103 should be withdrawn.

The Examiner has rejected claims 4 and 25 under 35 U.S.C. 103(a) as being unpatentable over the Pompei reference in view of Official Notice. Specifically, with reference to claim 4, the official action indicates that Official Notice is taken that the limitation of a plurality of channels consisting of respective

channels corresponding to a first location in front of a user of the system, a second location in back of the system user, a third location to the left of the system user, and a fourth location to the right of the system user, is commonly known. The Applicant respectfully traverses, however, the Examiner's taking of Official Notice regarding claim 4 because a system has not been heretofore known that includes an entertainment system and a directed acoustic sound system, as specifically recited in claim 4. The teachings of the Pompei reference modified as suggested in the official action therefore would not suggest to one of ordinary skill in this art at the time of the invention the subject matter of claim 4. For at least the reasons provided above with reference to claim 4, the Applicant further submits that the teachings of the Pompei reference modified as suggested in the official action would not suggest to one skilled in this art at the time of the invention the subject matter of claim 25. Accordingly, it is respectfully submitted that the rejections of claims 4 and 25 under 35 U.S.C. 103 should be withdrawn.

In view of the foregoing, it is respectfully submitted that the present application is in a condition for allowance. Early and favorable action is respectfully requested.

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The Examiner is encouraged to telephone the undersigned Attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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